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REMARKS

1. The Patent Office Action of October 4, 2007 is hereby acknowledged. The shortened statutory period of three (3) months time period for response to the Office Action expired on January 4, 2008. Concurrently with the filing of this amendment, the Applicant has requested a one- month extension of time and has paid the required fee of $60.00. Accordingly, the deadline to now file a responsive amendment is February 4, 2007. This Amendment is being mailed by United States Express Mail, Express Mail Label No. EM 167806255 US in a postage paid envelope addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on February 4, 2008. Therefore, this Amendment is timely filed. In the event that the Commissioner for Patents should determine that any additional fee is required for this Amendment to be timely filed and an appropriate fee is due for that extension of time, then the Commissioner for Patents is hereby authorized to charge Deposit Account Number 18-2222 for such appropriate fee.

2. The original '697 Application had a total of twenty (20) total claims wherein one (1) was independent claims. Through this Amendment, all of the original claims are cancelled, and a new set of Claims 21 to 44 is submitted including four (4) independent claims and twenty (20) dependent claims. Therefore, the Applicant has paid a total fee of $205.00 for one additional independent claim and four additional dependent claims. In the event that the Commissioner for Patents should determine that any additional fee is due, then the Commissioner for Patents is hereby authorized to charge Deposit Account Number 18-2222 for the appropriate fee.

3. In the Office Action of May 2, 2007, the Patent Examiner objected to the drawings of the '697 Application for various reasons including (1) that the drawings are not in English and (2) some figures were not properly labeled as "Prior Art". With this Amendment, the Applicant is submitting eight replacement sheets of the drawings, which have corrected the

non-English deficiency in the drawings, wherein Figure 1 has been labeled as the "Prior Art". However, the Applicant believes that the calculation mechanism illustrated in Figure 6 is part of the invention and therefore, Figure 6 is not labeled as the "Prior Art" in the replacement sheet.

In addition, additional issues have been found in the original drawings. Therefore, they have been resolved through this Amendment, which correspond the respective corrections presented in the replacement sheets of drawings. The corrections are:

(a) providing notation numbers "120"and "130" for the respective measuring and imaging light paths in Figure 4, which corrects deficiencies of the corresponding written disclosures in Chinese without the notation numbers;

(b) providing a notation number "14" with a symbol for the first mark point of the second embodiment of the projection device in Figure 8. The notation numbers "13" and "14" are correctly used in Figure 3 and correspond to written disclosures in the original document. However, only the number "13" is used for the second embodiment in the original Figure 8 and some inconsistencies using the number appear in the written disclosure;

(c) providing a notation number "18" with a symbol in Figure 8 for a first switcher for the second embodiment, which can respectively switch the first grating and first mark point of the projection device. This corrects deficiencies of lacking the number in the original written disclosure;

(d) providing a notation number "25" with a symbol for the second mark point of the second embodiment of the imaging device in Figure 9. The notation numbers "25" and "23" are correctly used in Figure 4 for the respective mark point and submaster grating and corresponding written disclosures in the original document. However, only the number "23" is used in the original Figure 9 and some inconsistencies using the number appear in the written disclosure for the second embodiment;

(c) providing a notation number "18" with a symbol in Figure 8 for a second switcher for the second embodiment of the imaging device, which can respectively switch the submaster

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grating and mark point of the imaging device. This corrects deficiencies of lacking the number in the original written disclosures.

In addition, each of the sheets is labeled as "Replacement Sheet". Therefore, the Applicant has complied with 37 CFR 1.121(d). The Applicant requests the Examiner to remove the objection to the drawings of the '839 Application.

5. In Paragraph 3 of the Office Action of October 4, 2007, the Examiner required revisions to tohe patent specification. Therefore, the Applicant has re-translated the original version of the specification in Chinese in to a new version of the specification in English according to the U.S. Practice. A copy of the new version of the specification is presented in Appendix I of this Amendment. During the translation, the Applicant has corrected the deficiencies in the original document, which have been addressed in Section 3 of this Amendment concerning numbers in the figures which correspond to the text. No new matter has been added.

Therefore, the Applicant respectfully requests the Examiner to allow replacing the previous copy of the specification in English with the currently submitted copy.

6. In Paragraph 6 of the Office Action of October 4, 2007, the Examiner also rejected all of the claims of the '697 Application under 35 U.S.C. § 1112. Therefore, the Applicant has cancelled all twenty claims which were originally filed. In addition, the Applicant has submitted Claims 21 to 44 which have been newly added through this Amendment, wherein they are presented at the beginning of this Amendment.

In following sections of this Amendment, the Applicant will discuss issues on:

Section 7: The newly added Claims 21 to 44 are in compliance with 35 U.S.C. § 112;

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Section 8: The '697 Application as now claimed in the independent apparatus Claims 21 and 36, and method Claims 37 and 44 are structurally different from United States Patent No.: 4, 758,093 to Stern et al. (hereafter the Stern Patent) and United States Patent No.: 6,084,712 to Harding (the Harding Patent); and

Section 9: The '697 Application is non-obvious over the Stern Patent in view of the Harding Patent.

7. The newly added Claims 21 to 44 are in compliance with 35 U.S.C. § 112.

The Applicant believes that the newly added Claims 21 to 44 are allowable since all of the claims are supported by the disclosure of the '697 Application.

In this section, the Applicant will indicate the disclosed contents which correspond to the respective claims. However, the independent Claims 21, 36, 37 and 44 and some dependent claims are quite long. In order to shorten the length of this Amendment while providing sufficient evidence of support in the patent specification, the Applicant will insert (i) locations (line and page numbers where the contents are disclosed in the specification of the '697 in English, or notation numbers of the corresponding drawings which represent the claimed structure of the claims), and (ii) comments after related words of the claims after a claimed element of the claims.

"21. An apparatus for measuring a contour of an object, comprising:

a. a projection device having a projecting optical axis (**FIG. 3**) is comprised of a light source (**11**), a movable projection lens (**15**), a first grating having a plurality of grating grooves (**13**) and a first mark point (**14**);

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b. an imaging device having an imaging optical axis (**FIG.4**) comprised of a movable imaging lens (**29**), a second grating including multiple grooves (**23**), a second mark point (**25**) and a first camera (**21**);

c. a first rectilinearly movable axle (**FIG. 2, 40**) which is positioned perpendicular to a second rectilinearly movable axle (**50**), wherein said object is rotatably and movably positioned (**80**) on said first rectilinearly movable axle which is aligned with said imaging optical axis of said imaging device (**20**), said projection device (**20**) is movably positioned on said second rectilinearly movable axle;

d. means for adjusting positions of the respective projection device and object to construct an initial right angled triangle (**FIG. 5, ΔABC**) from connecting said first mark point (**B**) of said projection device, said second mark point (**A**) of said imaging device and an image of said first mark point of said projection device which is projected onto said object (**Page 15, line 26, Page 16, line 1**);

e. means for further adjusting positions of the respective projection device and object to construct a subsequent right angled triangle (**FIG. 5, ΔADE**) from connecting said first mark point of said projection device, said second mark point of said imaging device and an image of said first mark point of said projection device which is projected onto said object, means for obtaining data of said subsequent right angled triangle including the projected object and image distances and imaged object and the imaged distances (**Page 17, lines 1-4**);

f. means for automatically refocusing said projection lens and imaging lens which results in obtaining four sequential graphs of moire fringes (**Page 17, lines 6-14, lines 21-24**);

g. means for calculating a phase diagram according to said graphs containing said moire fringes (**Page 17, line 26**);

h. means for calculating phase data (**Page 18, lines 13-14**)of surface points of said object according to a zero phase which is defined for said image of said first mark point which is projected on said object (**FIG. 7, Step 7**); and

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i. means for calculating altitude distribution (**Page 18, lines 19-20**) of said surface points of said object to thereby obtain an absolute full field three dimensional contour of said object with a high accuracy (**Page 29**, lines **14-16**).

22. The apparatus as claimed in Claim 21, further comprising a first and second grating rulers which are positioned in parallel with the respective first and second rectilinearly movable axles (**FIG. 7**, **60** and **70**).

23. The apparatus as claimed in Claim 21, further comprising a first rotating plate (**FIG. 2**, **30**) which is movably and rotatably positioned on said first rectilinearly movable axle, wherein said object (**80**) is positioned onto said first rotating plate, and said projecting optical axis of said projection device intersects said first rectilinearly movable axle at an angle (**FIG. 2**, **20** and **Page 13, lines 21-22**).

24. The apparatus as claimed in Claim 21, wherein said first mark point is positioned on one side of said first grating of said projection device as compared with said grooves which are positioned on the opposite side of said first grating (**FIG. 3**, **13** and **14**).

25. The apparatus as claimed in Claim 21, further comprising that said first mark point is positioned in parallel with said grooves of said first grating which is positioned in reference to said projecting optical axis (**FIG. 8**, **13** and **14**).

26. The apparatus as claimed in Claim 25, further comprising a first switcher which can switch the respective grating having said grooves and said first market point alternatively respectively in or off said projecting optical axis of said projection device (**FIG. 8**, **18**, and **Page 28, lines 13-14** and **22**).

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27. The apparatus as claimed in Claim 21, further comprising a grating linear positioner (**FIGs. 3** and **8**, **17**) in said projection device which can sequentially move said first grating along an orientation of said grating sides according to a predetermined distance including the respective quarter, a half, and a three quarter of a grating space (**Page 17, lines 21-23**).

28. The apparatus as claimed in Claim 21, wherein said second mark point is positioned in parallel with said multiple grooves of said second grating which is positioned in reference to said projecting optical axis (**FIG. 9**, **25** and **23**, and **Page 3, lines 6-7**).

29. The apparatus as claimed in Claim 28, further comprising a second switcher (**FIG.9**, **27**, and **Page 28, lines 16-17**, and **23**)which can switch said second grating having said multiple grooves and said second mark point alternatively respectively in or off said imaging optical axis of said imaging device.

30. The apparatus as claimed in Claim 21, wherein a type of said first and second gratings includes a Ronchi grating or sinusoidal grating (**Page 7, lines 1-2**).

31. The apparatus as claimed in Claim 21, wherein said first and second mark points are in either a cross or a round shape (**Page 7, line 2-3**).

32. The apparatus as claimed in Claim 21, further comprising a first and second linear positioners for moving the respective projection lens and imaging lens along the respective optical axe (**FIGs 3** and **8**, 16, and **FIGs 4** and **9**, **29A**).

33. The apparatus as claimed in Claim 21, wherein said imaging device is further comprised of an imaging light path (**FIG.** 4, *130*) and a measuring light path (**120**), said measuring light path comprising said movable imaging lens (**29**) with said second linear positioner

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(**29A**), said second grating (**23**), and a measuring camera (**21**) having a camera lens (**22**), said imaging light path comprising said movable imaging lens with said second linear positioner, a square prism (**24**), said second mark point (**25**), a reflection mirror (**26**), an imaging camera (**28**) having an imaging lens (**27**).

34. The apparatus as claimed in Claim 21, wherein said light source including a white light (**Page 7, line 5**).

35. The apparatus as claimed in Claim 21, further comprising an image capture board and a computer which installs said board for imaging processing (**Page 6, lines 5-6**).

36. An apparatus for measuring a contour of an object, comprising (**this is a reduced apparatus claim according to Claim 21**):

37. A method for measuring contour of an object, comprising steps of (**this is the method claim of the apparatus Claim 21**):

38. The method as claimed in Claim 37, wherein constructing said initial right angled triangle ABC is further comprised of steps of:

a. moving said object along said first rectilinearly movable axle to a position "C" adjacent said imaging device (**Page 15**, lines **16-18**);

b. focusing said projection lens to thereby form an image of said first mark point of said projection device on a surface of said object (**lines 18-20**);

c. focusing said imaging lens to thereby form an image of said object including said imaged first mark point on said object (**lines 20-21**);

d. moving said projection device along said second rectilinearly movable axle to thereby superpose said image of said imaged first mark point upon said second mark point of said imaging device (**lines 22-24**); and

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e. obtaining data of said initial right angled triangle ABC including an angle θ which is formed by intersecting said optical axis of said projection device and said optical axis of said imaging device, a length of a line AB which is a distance between said first mark point at a position B and said second mark point at a position A, and said length of said line AB determined from including a reading of a second grating ruler which is positioned in parallel with said second rectilinearly movable axle (**Page 15, lines 24-26, Page 16, lines 1-7**, and **FIG. 5**).

39. The method as claimed in Claim 38, wherein constructing said subsequent right angled triangle is further comprised of the steps of:

a. moving said projection device with a distance R_2 to a position D along said second rectilinearly movable axle, wherein a value of R_2 which is equal to a length of a line BD can be obtained from a reading of said second grating ruler (**FIG. 5, Page 16, lines 11-13**);

b. moving said object with a distance R_1 to a position E along said first rectilinearly movable axle, wherein a value of R_1 which equals a length of a line CE can be obtained by reading a first grating ruler which is positioned in parallel with said first rectilinearly movable axle (**FIG. 5, Page 16, lines 10-11**); and

c. determining a projected object distance as L_P, a project image distance as L_{PF}, an imaged object distance as Z_C, and an imaged image distance as Z_{CF} applying following Equations [1-5]:

$AD = AB + R_2$ [1]

$1/Z_C + 1/Z_{CF} = 1/F_1$ [2]

$Z_C + Z_{CF} = AD/\ tg\ \theta$ [3]

$L_P + L_{PF} = AD/\sin\theta$ [4]

$1/L_P + 1/L_{PF} = 1/F_2$ [5]

wherein θ = arc tg R_2/R_1, F_1 and F_2 are focal lengths of the respective projection lens and imaging lens (**Page 16, lines 13-26**).

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40. The method as claimed in Claim 39, wherein said step ofo automatically refocusing is further comprised of the steps of (**Page 17, lines 6-14**):

a. moving said projection lens along said projecting optical axis to a position which correlates to said project image distance L_{PF};

b. moving said imaging lens along said imaging optical axis to a position which correlates to said project image distance Z_{CF};

c. recording a first graph of moire fringes which are positioned on said second grating of said imaging device from applying said imaging camera; and

d. moving said first grating along an orientation of its grating surface according to a moving distance of a respective quarter, half and three-quarter grating space to thereby obtain additional three graphs of moire fringes (**Page 17, lines 21-24**).

41. The method as claimed in Claim 37, wherein said step of calculating a phase diagram is further comprised of applying the following Equations [6-10]:

$$I_1 = I_0 + A \sin (\varphi + 0) \qquad [6]$$

$$I_2 = I_0 + A \sin (\varphi + \pi 1/2) \qquad [7]$$

$$I_3 = I_0 + A \sin (\varphi + \pi) \qquad [8]$$

$$I_4 = I_0 + A \sin (\varphi + \pi 3/2) \qquad [9]$$

$$\varphi = \text{arc tg } (I_4 - I_2)/(I_1 - I_3) \qquad [10]$$

where φ is a phase of a measured surface point of said object, I_0 is an intensity of background lights, and A is a constant of said moire fringes (**Page 18, lines 1-12**).

42. The method as claimed in Claim 37, wherein said calculating phase data is further comprised of applying the principles of (**Page 18, lines 13-16**):

$\varphi_2 = \varphi_1 - 2\pi$ if $\varphi_2 - \varphi_1 \geq \pi$, and $\varphi_2 = \varphi_1 + 2\pi$ if $\varphi_2 - \varphi_1 \leq -\pi$

43. The method as claimed in Claim 37, wherein said calculating altitude distribution of surface points of said object is further comprised of applying a group of equations:

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$Z = \{(\varphi/2\pi f + X_C)D - L_{PF}B\}/ \{(\varphi/2\pi f + X_C)D - L_{PF}A\}$;

$X_Z = X_C (Z + Z_C)/ Z_{CF}$; and

$Y_Z = Y_C (Z + Z_C)/ Z_{CF}$

where X_Z, Y_Z and Z are three dimensional coordinates of respective surface points of said object (**Page 23, lines 7-16**), and factors of A, B, C and D can be obtained from the respective equations (**Page 22, lines 15-16**):

$A = Z_C Z_{CF} \sin\theta + Z_C Z_{CF} \cos\theta$;

$B = Z^2_C X_C \cos\theta$;

$C = Z_C Z_{CF} \cos\theta - Z_C Z_{CF} \sin\theta$; and

$D = - Z^2_C X_C \sin\theta + Z_C Z_{CF} L_P$

44. A method for measuring contour of an object, comprising steps of: (**this method claim is according to the apparatus claim 36**)"

Therefore, from the above analysis, it has been shown that each element of the newly added Claims 21 to 44 is supported by the respective disclosure in the identified portions of the patent specification of the '697 Application, which was originally filed February 9, 2002 (US filing on August 18, 2005). Therefore, this Amendment does not introduce new matter into the claims. Therefore the Amendment is compliance with 35 U.S.C. 112.

6: <u>The '697 Application as now claimed by the newly added apparatus Claims 21 and 36 is structurally different from the Stern Patent and the Harding Patent</u>

The '697 Application in technique is different from the Stern and Harding Patents. By this Amendment, the Applicant has defined the claims of the Application more particularly and distinctly so as to overcome the rejection based on the two cited references of Stern and Harding. In the following Table 1, the Applicant will compare the independent Claim 21 of the

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'697 Application with the Stern and Harding Patents so that their structural differences can be clearly distinguished, which also serves as a basis for patentability of the '697 Application.

Table 1: Comparison the claimed '697 Application with the Stern and Harding Patents

Structural Differences as Disclosed in the Specification and Claims
The Stern Patent is a technique of a line-by-line scanning for obtaining a full-field image of an object: "Light along path 111 is scanned toward lower path 124 within a vertical plane in order to illuminate a vertical stripe on surface 113. This vertical scan and subsequent horizontal stepping of light path 111 toward path 114 and light path 124 toward path 125..." (column 4, lines 63-68) <u>A projection device</u> a) A holographic means for accomplishing light scanning: A " holographic means for deflecting and scanning said directed beams, said holographic means supported on said mounting surface and comprising a rotatable disk having diffraction grating segments arranged about its circumferences" (Claim 1, col. 8, lines 60-64) b) The holographic means is only rotatable: "a controllable motor supported on said mounting surface for synchronously rotating said disk" (Claim 1, Col. 8, lines 66-68) c) Based on a predetermined angle: "a glass plate movably supported on said mounting surface at a predetermined angle for interposition in the path of said focused beam so as to offset said focused beam; and a solenoid supported on said mounting surface for interposing said glass plate in the path of said beam" (Claim 1, col. 9, lines 3-8) <u>An imaging device</u> which is stationary "a camera imaging means mounted on said base plate" (Claim 1, col 9, lines 9-10, FIG. 1a) a) A rotatable reflected off mirror (14, FIG. 1a) "a reflecting surface rotatably supported on said mounting surface for directing said formed radiant energy beam" (Claim 1, col. 9, lines 31-33) **The Harding Patent** is a technique of having multiple splitting lenses (18, FIG. 1) and a submaster grating (16, FIG. 1) through simultaneously acquiring multiple moire fringe patterns (FIG. 4) to obtain a full-filled image of an object. A projection device a) it is stationary (FIG. 1) <u>An imaging device from the apparatus claim</u>: a) "a plurality of splitting lenses optically coupled to said imaging lens" (Claim 16, col. 8, line 46-47) b) "a submaster grating optically coupled said plurality of splitting lenses optically coupled" (Claim 1, col. 7, line 41-42) c) "... wherein a plurality of phase shifted diffraction patterns are viewed" (Claim 16, col. 8, lines 52-53) <u>from the method claim</u>: a) "a plurality of splitting lenses" (Claim 1, col. 7, line 41) b) "a submaster grating" (Claim 1, col. 7, line 42-43) c) "... wherein a plurality of moire fringe patterns generated and create a sinusoidal light modulation; examining said plurality of moire fringe patterns to determining said full-field three dimensional data" (Claim 1, col. 7, line 42-45)

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Structural Differences as Disclosed in the Specification and Claims
The '697 Application as claimed in Claim 21: a. a projection device having a projecting optical axis is comprised of a light source, a movable projection lens, a first grating having a plurality of grating grooves and a first mark point; b. an imaging device having an imaging optical axis comprised of a movable imaging lens, a second grating including multiple grooves, a second mark point and a first camera; c. a first rectilinearly movable axle which is positioned perpendicular to a second rectilinearly movable axle, wherein said object is rotatably and movably positioned on said first rectilinearly movable axle which is aligned with said imaging optical axis of said imaging device, said projection device is movably positioned on said second rectilinearly movable axle; d. means for adjusting positions of the respective projection device and object to construct an initial right angled triangle from connecting said first mark point of said projection device, said second mark point of said imaging device and an image of said first mark point of said projection device which is projected onto said object; e. means for further adjusting positions of the respective projection device and object to construct a subsequent right angled triangle from connecting said first mark point of said projection device, said second mark point of said imaging device and an image of said first mark point of said projection device which is projected onto said object, means for obtaining data of said subsequent right angled triangle including projected object and image distances and imaged object and imaged distances; f. means for automatically refocusing said projection lens and imaging lens which results in obtaining four sequential graphs of moire fringes; g. means for calculating a phase diagram according to said graphs containing said moire fringes; h. means for calculating phase data of surface points of said object according to a zero phase which is defined for said image of said first mark point which is projected on said object; and i. means for calculating altitude distribution of said surface points of said object to thereby obtain an absolute full fielded three dimensional contour of said object with a high accuracy.

In summary of the technology differences for the above disclosed three inventions, the Stern invention is fundamentally different from inventions of the Harding Patent and '697 Application, where Stern discloses a line-by-line scanning technique to obtain a full-field image of a subject.

As to the differences between the Harding invention and the '697 Application as claimed in Claim 21, the Harding invention relies on applying the multiple splitting lenses in an imaging apparatus to simultaneously acquire a plurality of moire fringes for the full-field image of the subject. In terms of the '697 Application, it uses a sequential imaging technique to take sequential multiple images over the elapsed time to obtain the full-field image of the subject, which contradicts the simultaneously imaging multiple-image technique of the Harding invention.

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In summarizing the structural differences between the apparatuses, neither the Stern or the Harding devices enable movement in an x-y plane. Instead, the '697 Application enables the projection device and object to have the movement along the respective x and y coordinates in addition to the rotation of the object along a z coordinate. The '697 Application further comprises additional rotary table for positioning the object, which results in a convenience to take images of a full exterior surface of the object. The '697 Application additionally applies mark points to assist position adjustment of the devices, wherein none of the Stern and Harding Patents claim the "mark point". Furthermore, the '697 Application applies "means for adjusting positions" to construct the right angled triangle ABC, "means for further adjusting positions" to construct the subsequent right angled triangle ADE, "means for automatically focusing said projection lens and imaging lens" to obtain sequential graphs of moire fringes, "means for calculating a phase diagram", "means for calculating phase data" and "means for calculating altitude distribution" of the surface points of the object.

Clearly, the '697 Application as claimed in Claim 21 is patentable in accordance with the Stern and Harding Patents, since " *If one prior art reference completely embodies the same process or product as any claim of the patent in suit, the process or product recited by the claim is said to be 'anticipated' by the prior art, and the claim is therefore invalid under 102 for want of novelty*", *Shatterproof Glass Corp. v. Libbny-Owens Ford Co.* 225 USPQ 635, 644 (Page 637, the First Column), and from "*Invalidity for anticipation requires that all of the element and limitation of the claim are found with a single prior art reference*", and "*there must be no difference between the claimed invention and reference disclosure, as viewed by a person of ordinary skill in the field of invention*", *Scripps Clinic v. Genentech Inc.*, 18 USPQ2d, 1001, 1016 (Page 1010, the First column).

In addition, Claim 36 is also patentable since it is a reduced form of Claim 21. Therefore, Claim 36 is also comprised of the structural elements of (1) "mark points" in the

respective steps "a" and "b", (2) the "first and second rectilinearly movable axles" along the respective x and y coordinates in step "c", (3) a rotatable object in step "c" and "means for sequentially adjusting positions of the respective projection device and object to construct sequential right angled triangles from connecting the respective the first mark point of the projection device and second mark point of the imaging device and an image of the first mark point... projected onto the object". These structural elements make Claim 36 distinguishable over the Stern and Harding Patents thereby to make Claim 36 patentable.

As to the method claim of Claim 37, it is clear that Claim 37 is also patentable. This is because Claim 37 belongs to a product-by-process claim system, where the product claim of Claim 21 has been demonstrated to be in an allowable form, which makes the process claim of Claim 37 patentable. For this reason the method Claim 44 is also patentable since it is comparable to the apparatus Claim 36, which has been demonstrated to be in an allowable form.

The above conclusion that the independent product Claims 21 and 36 and the corresponding process Claims 37 and 44 are in the allowable form further leads to the conclusion that all dependent claims of the '697 Application which are dependent upon the respective Claims 21, 36 and 37 are patentable since they both inherit the respective distinguishable structural elements of the respective independent Claims 21, 36 and 37.

In addition to the above reason, the dependent claims are independently patentable since they contain additional structural elements which are distinguishable over the Harding and Stern Patents.

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7: The '697 Application is non-obvious over the Stern Patent in view of the Harding Patent

In the Office Action dated October 04, 2007, the Examiner has rejected the '697 Application based on 35 U.S.C. 103, where the Examiner states "Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stern et al (4,758,093) in view of Harding (6,084,712)".

The Applicant respectfully disagrees with the rejection under 35 U.S.C. 103(a) since it is inappropriate to combine the Stern and Harding Patents wherein such combination contradicts the rules of MPEP. The Applicant will follow the instructions of MPEP, Section 2143 Basic Requirements of a *Prima Facie* Case of Obviousness, Rev. 3, August 2005, 2100-135 to 2100-140 to prove that the amended claims of the '697 Application are not obvious over the Stern Patent in view of the Harding Patent.

I. The '697 Application is non-obvious over the Stern Patent in view with the Harding Patent following a criterion of MPEP: being obviousness that the proposed modification cannot change the principle of operation of a reference

MPEP states: "*If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 123 USPQ 349*", MPEP Rev. 3, August 2005; 2100-138; and '*The court reversed the (*obvious*) rejection holding the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under the [primary reference] construction was designed to operate.*" 123 USPQ at 352, MPEP Rev. 3, August 2005; 2100-138.

Following the above MPEP instructions, one can clearly see that, if combining the Harding technology, the Stern Patent would need a complete structural reconstruction from

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its principle of the line-by-line scanning technology to the principle of the full-field instantly imaging technique. This absolutely causes a violation of the above stated rules of MPEP. Therefore, the '697 Application is non-obvious over the Stern Patent in view with the Harding Patent.

II. The '697 Application is non-obvious over the Stern Patent in view with the Harding Patent following a criterion of MPEP: being obviousness that the proposed combination should have reasonable expectation of success

MPEP states: "*Evidence showing there was no reasonable expectation of success may support a conclusion of nonobviousness" In re Rinehart, 189 USPQ 143*; MPEP Rev.3, August 2005, 2100-139.

If to combine with two technologies while keeping the structural features of the Stern technology, the new system must add the splitting lenses in the imaging device. However the splitting lens cannot work appropriately as claimed in the Harding Patent. This is because the projection device of the new system which retains the character of the Stern Patent working in the form of the line-by-line projection makes the splitting lenses absolutely impossible to simultaneously construct a plurality of moire infringes. This illustrates that there is no reasonable expectation of success, which further proves that the '697 Application is of nonobviousness.

III. The '697 Application is non-obvious over the Stern Patent in view of the Harding Patent following a criterion of MPEP: being obviousness that all claim limitations must be taught or suggested by the prior art

MPEP states "*To established prima facie obviousness of a claimed invention, all the claim limitation must be taught or suggested by the prior art." In re Poyka*, 180 USPQ 580; MPEP Rev. 3, August 2005, 2100-139. In addition, the Board states "*Our reviewing courts have often advised the Patent and Trademark Office that it can satisfy the burden of establishing a*

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prima facie case of obviousness only by showing some objective teaching in either the prior art, or knowledge generally available to one of ordinary skill in the art that 'would lead' that individual 'to combine the relevant teachings of the references.'...Accordingly, an examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done" Ex parte Livengood, 28 USPQ2d 1300.

However, after carefully studying the Stern Patent and the Harding Patent, the Applicant has found that the Stern Patent neither makes a suggestion for implementing "a plurality of splitting lenses" nor mentions the phrase "splitting lenses" in the entire document. As to the Harding Patent, it neither has a suggestion for implementing the "holographic means for deflecting and scanning said directed beams" nor discloses the "deflecting and scanning" technique in its invention. Therefore, it is logical that the rule of 35 U.S.C. 103 cannot be applied to the '697 Application.

In conclusion, from the above analyses, the Applicant has demonstrated that the '697 Application is nonobvious over the combination of the Stern and Harding Patents, where the analyses follow instructions of MPEP, Section 2143 Basic Requirements of a *Prima Facie* Case of Obviousness, Rev. 3, August 2005, 2100-135 to 2100-140. Therefore, the Applicant requests the Examiner to allow the patentability of all newly added claims of the '697 Application.

8. Conclusion

The Applicant by this Amendment has defined the claims of the invention more particularly and distinctly so as to overcome the technique rejection. Since the claims define

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novel structure as described in this Amendment, the Applicant submits that such claims are clearly patentable.

The Examining Attorney is respectfully requested to call the Applicant's Attorney if the Examining Attorney has any questions concerning the statements made in this Amendment.

Therefore, it is respectfully submitted that all of the Patent Examiner's directives have been complied with including the replaced sheets of the drawings. Further, the analysis has been presented of differences in the product system and process method among the present invention and cited references. Accordingly, it is respectfully submitted that this patent application is now in condition for allowance and issuance of a Notice of Allowance for the amended claims is respectfully solicited.

Respectfully submitted,

Date: Feb 4, 2008

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